

REMARKS

Claims 1-3 and 5-11 are pending. By this Amendment, Claim 4 is canceled without prejudice or disclaimer, Claims 1-3, 5 and 8-11 are amended. Because support for the amendments to Claims 1 and 8 is found in the application as originally filed, including the figures, and at least in originally filed Claims 5 and 9, the amendments to Claims 2, 5 and 9 being made in response thereto; and support for the amendments to Claim 10 can be found at least in originally filed Claim 8, Applicants respectfully submit that no new matter is presented herein.

Claim Rejection – 35 U.S.C. § 112

Claim 3 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse the rejection for the following reason(s). The Office Action alleges that it is not clear how the stabilizer is fixed to the right and/or left reinforcement members when it appears that, when viewing Figure 12, the stabilizer is attached at attachments, which are arranged above the reinforcement members. Applicants respectfully note that Figures 14 and 15, as well as the corresponding discussion on page 45, line 22 to page 46, line 17 of the originally filed application, provide support for the features recited by Claim 3, but also show or explain how the stabilizer is fixed to the left rear joint portion and left reinforcement member and/or the right rear joint portion and the right reinforcement member. In view of the above, Applicants respectfully submit that not only is Claim 3 definite, but is fully and clearly supported by the originally filed application. Applicants respectfully request withdrawal of the rejection.

Claim Rejection -- 35 U.S.C. §103

Claims 1-5 and 8-9 are rejected under 35 U.S.C. §103(a) as being unpatentable over JP 2000-177621 to Ihara, in view of JP 11-208503 to Kubota et al. (Kubota), U.S. Patent No. 6,679,523 to Yamamoto et al. (Yamamoto), and JP 2,690,544 to Kokubu et al. (Kokubu); and Claims 6-7 and 10-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ihara, Kubota, Yamamoto, and Kokubu, as applied to Claims 1-5 and 8-9, and further in view of U.S. Patent No. 5,104,142 to Tsubota et al. (Tsubota).

Applicants respectfully traverse the rejection for at least the following reason(s).

Claims 1 and 3 each recite a body frame structure having a front subframe that includes, among other features, left and right rear joint portions, which connect distal ends of left and right longitudinal members, respectively, to a rear cross member, as well as the rear cross member itself, are formed integrally of an aluminum alloy die-cast product, and that left and right front joint portions and the left and right rear joint portions define car body support portions where the front subframe supports the car body.

In view of the structural arrangement of the claimed features, the transmission performance of a load at the front subframe is heightened as well as the shape retaining ability of the subframe. In other words, the claimed structure of the invention enables a load to be input from the left and right front joint portions into the rear die-cast members (i.e., the left and right rear joint portions and the rear cross member) via the left and right longitudinal members, which are formed of an aluminum alloy wrought product. The claimed invention also separates the rear cross member from the car body and

increases the ability to cushion the body frame structure from any collision load, which occurs by the left and right longitudinal members deforming.

Moreover, by forming the left and right front and rear joint portions of an aluminum alloy die cast product, when a load is applied to the front cross member of the subframe, the load is safely input along the left and right longitudinal members, which are formed of wrought aluminum alloy, so that it is possible to control the direction and force of the input load, thereby cushioning any shock to the occupants of the vehicle.

Further, the invention limits or prevents any increase in the weight of the body frame structure. As a result, it is possible to improve driving comfort and improve the fuel consumption rate of a vehicle having the claimed body frame structure.

Applicants further note that Claims 1, 8 and 10 recite the steering system parts that are part of the front subframe include a steering gear box; and that Claims 1, 8 and 10 further recite the steering gear box is supported on the rear cross member of the front subframe.

Applicants respectfully submit that Ihara, Kubota, Yamamoto, Kokubu and Tsubota, alone or in any combination thereof, fail to teach or suggest the features recited by Claims 1, 8 and 10.

For example, Ihara teaches a subframe 20 having a front cross member 23, left and right front joint portions 30, 30 connected to left and right ends portions of the front cross member 23, left and right longitudinal members 21, 22 that extend rearward from the left and right front joint portions 30, 30, respectively, left and right rear joint portions 32, 32 that are connected to the distal ends of the left and right longitudinal members 21, 22, respectively, and a rear cross member 24 connected, at left and right ends

thereof, to the left and right rear joint portions 32, 32, respectively. Suspension arms 55, 55 are rotatably disposed in a vertical direction to the left and right longitudinal members 21, 22. The left and right rear joint portions 32, 32 are rotatably attached to a suspension arm 55 via a bolt 57, and the left and right rear joint portions 32 are formed from an extruded aluminum alloy having a closed cross sectional part 51 encircled with portions of an upper wall 40, a lower wall 41, a front vertical rib 43, and a rear vertical rib 44. Moreover, the front cross member, 23, left and right front joint portions 30, 30, left and right longitudinal members 21, 22, and rear cross member 24 are also formed from an extruded aluminum alloy. As acknowledged by the Office Action, Ihara does not teach or suggest that any of the components of the subframe 20 are formed from an aluminum die cast product, especially the left and right front and rear joint portions 32, 32, which are specifically formed from an extruded aluminum alloy to form the complex structure shown in Figure 4.

As illustrated in Figure 1, Kokubu teaches a rear subframe of a body frame structure, and not a front subframe. Also, the subframe 20 taught by Kokubu does not teach left and right front joint portions that join the front cross member 21 to the left and right longitudinal members 41, 51, and also does not teach left and right rear joint portions that join the left and right longitudinal members 41, 51 to the rear cross member 31. Kokubu teaches the rear cross member 31 and left and right longitudinal members 41, 51 are formed from a cast aluminum.

Applicants note Kokubu fails to teach or suggest left and right front or rear joint portions because the front cross member 21 is bolted directly to the left and right longitudinal members 41, 51, as is the rear cross member 31.

Yet, the Office Action asserts it would have been obvious to one of ordinary skill in the art to modify the left and right front joint portions 30, 30, and the left and right rear joint portions 32, 32 of Ihara's subframe 20 so they are formed from a cast aluminum, as taught by Kokubu, in accordance with the degree of rigidity required of the subframe 20. However, as noted above, the left and right rear joint portions 32, 32 of Ihara have a complex network or grid of walls 40, 41, 43, and 44 that encircle the area 51 where the suspension arm 55 is rotatably attached to the joint portion 32. The structural arrangement of the walls 40, 41, 43 and 44 is such that if rigidity were a concern, one of ordinary skill in the art would increase the thickness of the walls 40, 41, 43 and 44 rather than changing the material from which the joint portions 32, 32 are formed. Furthermore, die casting a complex network of walls and the like is not easy or cost efficient to achieve, and would therefore not be an "obvious" modification of the Ihara subframe 20 to one of ordinary skill in the art, especially since Ihara and Kokubu are not concerned with cushioning a collision load via cast front and rear joint portions, let alone load transmission.

As such, Applicants respectfully submit that one of ordinary skill in the art would not consider it obvious to modify the material from which the front and rear joint portions of Ihara's subframe are formed. That is, it would not be obvious to form the front and rear joint portions from cast aluminum instead of extruded aluminum, especially, in view of the complex structure of the rear joint portions 32, 32.

Applicants further note that Claims 1, 8 and 10 recite the steering system parts that are part of the front subframe include a steering gear box; and that Claims 1, 8 and 10 further recite the steering gear box is supported on the rear cross member of the front subframe. The Office Action admits that Ihara fails to teach or suggest a steering gear box provided on the rear cross member and alleges that Kubota teaches a steering gear box on the rear cross member. However, a review of Kubota fails to uncover any such teaching. If the Office Action means to state that the item 36 is the steering gear box, Applicants submit the steering gear box 36 is provided on left and right side longitudinal members or possibly left and right rear joint portions of the subframe and not the rear cross member of the subframe.

Yamamoto is cited merely for teaching a front subframe that supports suspension parts and does not cure the deficiency of Kubota.

Tsubota is cited merely for teaching an adjusting mechanism joined to a front subframe at a location where the front suspension is supported and does not cure the deficiency of Kubota.

Applicants respectfully submit that Ihara, Kubota, Yamamoto, Kokubu and Tsubota, alone or in any combination thereof, fail to teach or suggest all of the features recited by Claims 1, 8 and 10. As such, Applicants respectfully submit that Claims 1, 8 and 10 are not rendered obvious in view of the applied art of record and should be deemed allowable.

Claims 2-3 and 5-7 depend from Claim 1; Claim 9 depends from Claim 8; and Claim 11 depends from Claim 10. It is respectfully submitted that these dependent claims be deemed allowable for at least the same reason(s) Claims 1, 8 and 10 is(are) allowable, as well as for the additional subject matter recited therein.

Withdrawal of the rejections is respectfully requested.


Conclusion

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding rejections, allowance of Claims 1-3 and 5-11, and the prompt issuance of a Notice of Allowability are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing attorney docket number 107355-00163.**

Respectfully submitted,



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